Amendments to the Claims

1-36 CANCELED.

37. (Currently amended) A method of detecting fluorescence of a fluorophore in a system comprising the fluorophore and a nucleic acid polymer having a phosphodiester backbone comprising an anthraquinone quencher ~~attached~~ <u>covalently bound</u> to the polymer, comprising detecting the fluorescence of the system.

38. (Previously presented) The method of claim 37, wherein a change in fluorescence of the system is correlated with a change in the spatial relationship between the quencher and the fluorophore.

39. (Previously presented) The method of claim 37, wherein the fluorophore is attached to the nucleic acid polymer comprising the anthraquinone quencher.

40. (Previously presented) The method of claim 39, wherein the fluorophore and anthraquinone quencher are attached to the polymer such that the fluorescence of the fluorophore is reduced.

41. (Previously presented) The method of claim 40, wherein the nucleic acid polymer forms a random-coil conformation when the nucleic acid polymer is unhybridized, such that the fluorescence of the fluorophore is reduced.

42. (Previously presented) The method of claim 37, wherein the system is a system for detecting a target nucleic acid having a sequence complimentary to at least a portion of the nucleic acid polymer, hybridization of the nucleic acid polymer to the target nucleic acid causing a change in fluorescence indicative of the presence of the target nucleic acid.

43. (Previously presented) The method of claim 42, wherein the nucleic acid polymer comprises a self-complimentary sequence and wherein the quencher and the fluorophore are attached to the nucleic acid polymer such that the fluorescence of the fluorophore is quenched by the anthraquinone quencher when the nucleic acid polymer undergoes intramolecular base pairing.

44. (Previously presented) The method of claim 43, wherein hybridization of the polymer to the target nucleic acid results in an increase in fluorescence of the fluorophore.

45. (Previously presented) The method of claim 42, wherein the fluorophore is attached to a second nucleic acid polymer, and wherein the first and second nucleic acid polymers hybridize to two adjacent regions of the target nucleic acid such that when both polymers hybridize to the target nucleic acid the fluorescence of the fluorophore is reduced.

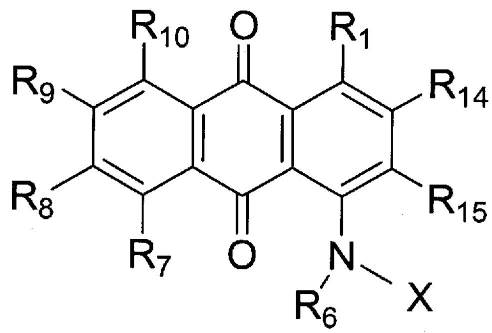
46. (Previously presented) The method of claim 42, wherein the fluorophore is attached to a second nucleic acid polymer complimentary to the first nucleic acid polymer, such that when the first and second nucleic acid are hybridized, the fluorescence of the fluorophore is reduced.

47. (Previously presented) The method of claim 46, wherein the system further comprises a target nucleic acid comprising a sequence that hybridizes to the first or second nucleic acid polymer, hybridization of the target nucleic acid to the first or second nucleic acid polymer causing an increase in fluorescence.

48. (Previously presented) The method of claim 37, wherein the system is a system for measuring RNAse activity, wherein the nucleic acid polymer is a ribonucleic acid polymer comprising the fluorophore attached thereto, wherein the ribonucleic acid polymer comprises an RNAse restriction site between the quencher and the fluorophore, a change in fluorescence indicating the presence of RNAse.

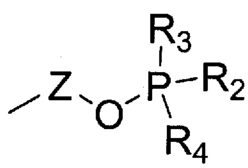
49. (Previously presented) The method of claim 37, wherein the system is a PCR reaction, mixture wherein synthesis of product results in a change in fluorescence.

50. (Previously presented) The method of claim 37, wherein the anthraquinone quencher is of formula (1)



(1)

wherein the groups R_7, R_8, R_9, and R_{10} independently are hydrogen or an electron withdrawing group; the groups R_1, R_{14}, and R_{15} independently are hydrogen or electron donating groups; R_6 is a group other than acetyl that can covalently bind to nitrogen; and X is a chemical composition of formula (2)



(2)

wherein Z is a linking group or bond with the anthraquinone; R_2, R_3, and R_4 independently are an electron pair, linker, oxygen, hydrogen, sulfur, alkyl, alkynyl, alkenyl, aryl, heteroaryl, cycloalkyl, heteroalkyl, alkoxy, carbonyl, carbamoyl, alkylaryl, heteroalkoxy, or $-NR_{11}R_{12}$ or $-OR_{13}$, wherein not more than one of R_2, R_3, and R_4 is an electron pair; and R_{11}, R_{12}, and R_{13}; independently are a hydrogen, alkyl, alkynyl, alkenyl, aryl, heteroaryl, cycloalkyl, heteroalkyl, alkoxy, alkoxycarbonyl, carbonyl, carbamoyl, alkylaryl, or heteroalkyl group.